

## REMARKS

Claims 11-30 are pending in the application. Claims 20, 23-25, and 28 are withdrawn as being directed to nonelected species. In the Office Action mailed June 18, 2007, the specification is objected to because the drawing numbers are not correctly referred to in the Brief Description of the Drawings. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph as being indefinite. Claims 11-15, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,114,115 (Wagner, Jr., hereinafter “Wagner”). Claims 11-15, 19, 21, 22, 26, 27, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,922,539 (Modrich et al., hereinafter “Modrich”). Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modrich in view of U.S. Pat. No. 7,033,757 (Makrigiorgos).

### **I. Objections to Specification**

The Specification is objected to because the drawing numbers are not correctly referred to in the Brief Description of the Drawings. The Applicants have herein amended the Specification to correctly reference the drawing numbers and to correct typographical errors noticed by the Applicants. No new matter is added by these amendments. Entry of these amendments and withdrawal of the objection to the Specification is therefore respectfully requested.

### **II. Rejections under 35 U.S.C. 112, first paragraph**

Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, claim 18 is rejected as reciting new matter which is not described in the specification. The Applicants have herein cancelled claim 18.

### **III. Rejections under 35 U.S.C. 112, second paragraph**

Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. In particular, claims 17 and 18 are rejected as being indefinite because “it is unclear that at least two components in the claim are the same or different from at least one component in claim 14 or not.” The Applicants have herein cancelled claims 17 and 18.

#### **IV. Claim amendments**

Claims 11-13 have been amended in order to more distinctly claim and point out the Applicants' invention. In particular, the Applicants have herein amended independent claims 11-13 in order to recite that the provided nucleic acid molecules are synthesized to have a user-specified sequence and length by the steps of: *providing a first immobilized nucleic acid comprising a first 5' region and a first 3' region; providing a second immobilized nucleic acid comprising a second 5' region and a second 3' region, wherein said second 3' region and said first 5' region comprise identical nucleic acid sequences; contacting said first immobilized nucleic acid with an oligonucleotide under conditions promoting hybridization of said oligonucleotide to said first 3' region and extension of said hybridized oligonucleotide to produce a first extension product comprising a first extension product 3' region that is complementary to said first 5' region; and contacting said second immobilized nucleic acid with said first extension product under conditions promoting hybridization of said first extension product 3' region to said second 3' region and extension of said hybridized extension product 3' region to produce a second extension product comprising a second extension product 3' region that is complementary to said second 5' region, wherein said second extension product comprises said first and second 3' and 5' regions.* Support for this amendment is found at least at paragraphs [0064] -[0070], in original claim 1, and in Figs. 1A-F. No new matter is added by these amendments, entry of which is therefore respectfully requested.

#### **V. Rejections under 35 U.S.C. 102(b)**

Claims 11-15, 19 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Wagner. The Applicants respectfully traverse the rejections. In the Applicants' invention, errors are removed and controlled in newly created nucleic acid molecules having a user-specified sequence and length. Wagner does not teach this aspect of the invention of the Applicants, as *Wagner fails to teach removal and control of errors in nucleic acid molecules having a user-specified sequence and length.* Further, as described in Section VI, the Applicants have herein amended independent claims 11-13 to specifically recite the steps of a preferred embodiment of a process by which the provided nucleic acid molecules having a user-specified sequence and length are synthesized. As Wagner fails to teach removal and control of errors in nucleic acid molecules having a user-specified sequence and length, *Wagner also fails to teach the*

*Applicants' claimed specific process by which the provided nucleic acid molecules having a user-specified sequence and length are synthesized.*

This deficiency of Wagner is not cured by any other art of record, none of which teach removal and control of errors in nucleic acid molecules *having a user-specified sequence and length and synthesized by the specific process of the Applicants*, in combination with the other claimed elements of the Applicants invention, as recited in currently amended independent claims 11-13. Wagner therefore fails to anticipate or make obvious the Applicants' invention, whether taken alone or in combination, as does all other art of record. Reconsideration and withdrawal of the rejections of independent claims 11-13 over Wagner is therefore respectfully requested.

Because claims 14, 15, and 19 depend from currently amended independent claim 11, which is in condition for allowance, claims 4, 15, and 19 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 4, 15, and 19 is therefore also respectfully requested. Because claim 30 depends from currently amended independent claim 13, which is in condition for allowance, claim 30 is also in condition for allowance. Reconsideration and withdrawal of the rejection of claim 30 is therefore also respectfully requested.

Claims 11-15, 19, 21, 22, 26, 27, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Modrich. The Applicants respectfully traverse the rejections. As discussed previously, in the Applicants' invention, errors are removed and controlled in newly created nucleic acid molecules having a user-specified sequence and length. Modrich also does not teach this aspect of the invention of the Applicants, as *Modrich fails to teach removal and control of errors in nucleic acid molecules having a user-specified sequence and length*. Further, as previously discussed, the Applicants have herein amended independent claims 11-13 to specifically recite the steps of a preferred embodiment of a process by which the provided nucleic acid molecules having a user-specified sequence and length are synthesized. As Modrich fails to teach removal and control of errors in nucleic acid molecules having a user-specified sequence and length, *Modrich also fails to teach the Applicants' claimed specific process by which the provided nucleic acid molecules having a user-specified sequence and length are synthesized*.

This deficiency of Modrich is not cured by any other art of record, none of which teach removal and control of errors in nucleic acid molecules *having a user-specified sequence and length and synthesized by the specific process of the Applicants*, in combination with the other

claimed elements of the Applicants invention, as recited in currently amended independent claims 11-13. Modrich therefore fails to anticipate or make obvious the Applicants' invention, whether taken alone or in combination, as does all other art of record. Reconsideration and withdrawal of the rejections of independent claims 11-13 over Modrich is therefore respectfully requested.

Because claims 14, 15, and 19 depend from currently amended independent claim 11, which is in condition for allowance, claims 21 and 19 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 4, 15, and 19 is therefore also respectfully requested. Because claims 21 and 22 depend from currently amended independent claim 12, which is in condition for allowance, claims 21 and 22 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 21 and 22 is therefore also respectfully requested. Because claims 26, 27, 29, and 30 depend from currently amended independent claim 13, which is in condition for allowance, claims 26, 27, 29, and 30 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 26, 27, 29, and 30 is therefore also respectfully requested.

#### **VI. Rejections under 35 U.S.C. 103(a)**

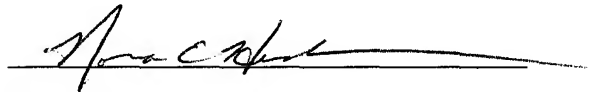
Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Modrich in view of Makrigiorgos. Claim 17 has been cancelled. The Applicants respectfully traverse the rejection of claim 16. As discussed in the previous section, Modrich fails to teach removal and control of errors in nucleic acid molecules *having a user-specified sequence and length and synthesized by the specific process of the Applicants*. These deficiencies of Modrich are not cured by Makrigiorgos or any other art of record. Because Makrigiorgos fails to cure the deficiencies of Modrich, Modrich in view of Makrigiorgos therefore fail to make obvious the Applicants' invention. Reconsideration and withdrawal of the rejection of claim 16 is therefore respectfully requested.

Furthermore, because claim 16 depends from currently amended independent claim 11, which is in condition for allowance, claim 16 is also in condition for allowance. Reconsideration and withdrawal of the rejection of claim 16 is therefore also respectfully requested.

**VII. Conclusion**

Claims 17 and 18 have been cancelled. Claims 11-13 have been amended. No new matter is presented by these amendments. The Applicants respectfully submit that claims 11-16, 19, 21, 22, 26, 27, 29, and 30 are now in condition for allowance, which action is now requested. For this reason, and in view of the foregoing arguments, the Applicants believe that this application is now in condition for allowance, which action is respectfully solicited. Should there remain any unresolved issues, it is respectfully requested that the Examiner telephone Norma E. Henderson, Applicants' Attorney, at 603-437-4400, so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,



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Date

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